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(54) **Corner support hinge for a window and/or door**

(57) The present invention relates to a corner support hinge for a window and/or doors to provide corner support of a frame of a window and/or door sash on a fixed frame, comprising a frame corner, which can be fastened to a fixed frame, a sash corner, which can be mounted to a frame sash by means of an adjustment screw guide for height adjustment of a sash frame and a scissors mechanism, by means of which a frame corner and a sash corner are movable relative to each other. It is provided for, according to the present invention that a scissors mechanism (3) is movable by means of a shifting element (8) arranged on a horizontal leg (1.1) of a corner (1) of the window and/or door frame.

anism, by means of which a frame corner and a sash corner are movable relative to each other. It is provided for, according to the present invention that a scissors mechanism (3) is movable by means of a shifting element (8) arranged on a horizontal leg (1.1) of a corner (1) of the window and/or door frame.

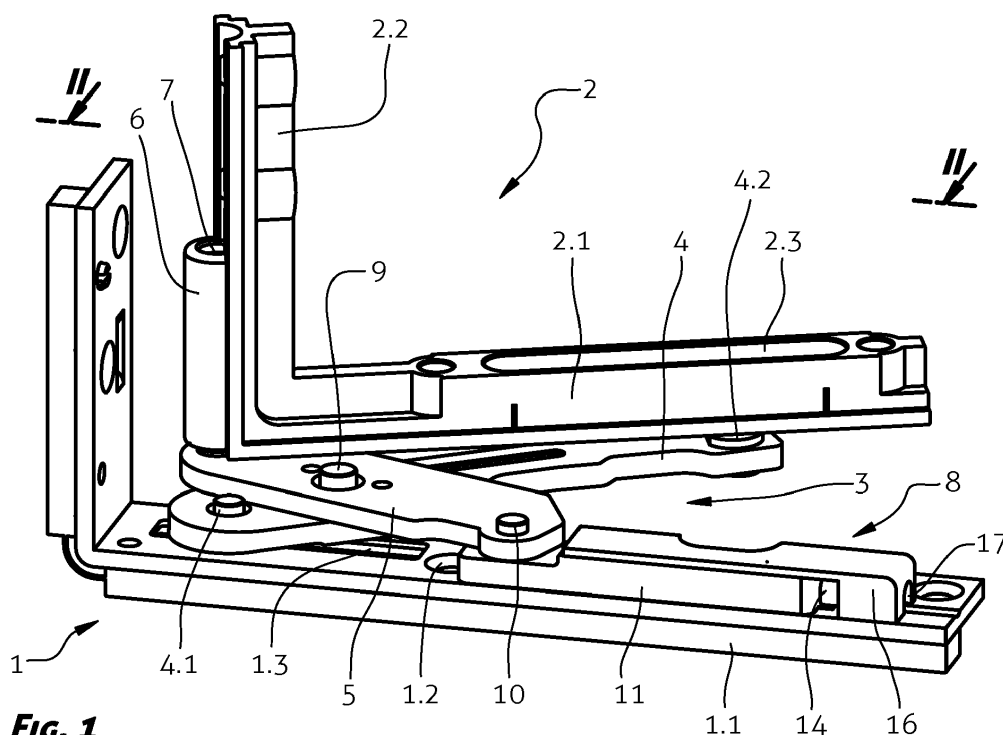


Fig. 1

Description

[0001] The present invention relates to a corner support hinge for a window and/or doors to provide corner support of a frame of a window and/or door sash on a fixed frame, comprising a frame corner, which can be fastened to a fixed frame, a sash corner, which can be mounted to a frame sash by means of an adjustment screw guide for height adjustment of a sash frame and a scissors mechanism, by means of which a frame corner and a sash corner are movable relative to each other.

[0002] A support hinge of the above mentioned type is well known and comprises a corner, which can be mounted to a frame sash of a window and/or door and a corner, which can be fastened to a fixed window and/or door frame. Said corners are mutually connected by a scissors mechanism being fixed essentially in a longitudinal direction of the corners resulting in a fact that the frame sash adjustment relative to the fixed frame in the horizontal direction can not be achieved.

[0003] It is the object of the present invention to create a window and/or door support hinge which remedies drawbacks of the known solutions.

[0004] The object as set above is solved according to the present invention by a scissors mechanism, with which a frame corner and a sash corner are movable relative to each other, said scissors mechanism can be moved by means of a shifting element, arranged on a horizontal leg of the corner of the window and/or door frame.

[0005] The invention is further described in detail by way of non-limiting preferred embodiment, and with a reference to the accompanying drawing, where

Fig. 1 shows a three-dimensional view of a support hinge according to the invention;

Fig. 2 shows a cross-sectional view of a hinge of Fig. 1 along the line II-II.

[0006] According to the present invention, a corner support hinge of the window and/or door is intended to open and close windows and/or doors, i.e. turning around a vertical axis, as well as tilting the window, i.e. rotating around a horizontal axis. Said corner support hinge comprises an angle section 1 of a frame, that can be fastened onto a fixed frame of a window and/or door, an angle section 2 of the sash, that can be mounted on the sash frame, and a scissors mechanism 3, by which the angle section 2 is movable in relation to the angle section 1. Said scissors mechanism 3 comprises a first arm 4 being articulated with the first end thereof to the horizontal leg 1.1 of the angle section 1 of the frame, and being articulated with the second end thereof to a horizontal leg 2.1 of the angle section 2 of the sash. Furthermore, said scissors mechanism 3 comprises a second arm 5 being articulated with the first end thereof to a receptacle 6 for an adjustment screw 7, and being articulated with the second end thereof to a shifting element 8. The arms 4,

5 are mutually articulated in a manner known per se by means of a pin 9. Said receptacle 6 is integral with a vertical leg 2.2, whereas the shifting element 8 is arranged on said the horizontal leg 1.1.

[0007] In order to allow movement of the window and/or door sash in horizontal direction in relation to the frame, said shifting element 8 on the horizontal leg 1.1 is arranged movably in the longitudinal direction of the leg 1.1. To that end, said leg 1.1. is formed with an elongated through-hole 1.2 intended to cooperate with pin 10, enabling simultaneously articulated connection of said second arm 5 of the scissors mechanism 3 with the shifting element 8. Furthermore, said horizontal leg 1.1 is formed in the area of the articulated connection with the first arm 4 of the scissors mechanism 3 with an additional through-hole 1.3 cooperating with a guide bar 4.1 of the first arm 4. In addition, said horizontal leg 2.1 of the angle section 2 of the sash is formed with an elongated through-hole 2.3, cooperating with the second end of said first arm 4 and, respectively, a bolt 4.2 placed therein.

[0008] Said shifting element 8 is formed of a slider 11 being arranged on the leg 1.1 and slidably movable in the longitudinal direction thereof, the first end of the slider 11 being articulated by means of the pin 10 with the second arm 5. The second end i.e. the free end of the slider 11 is formed with a threaded hole 12 that cooperates with a screw means 13 arranged on the leg 1.1, the threaded hole 12 and the screw means 13 extending in parallel with said leg 1.1. In order to enable movement of the slider 11 in the longitudinal direction of the leg 1.1, a depression 14 is provided in the area of the free end of the leg 1.1, into which fits a free end 15 of the screw means 13 where a torque may be introduced to rotate the screw means 13, for instance by means of an appropriate tool. In the present embodiment, a head 15 of the screw 13 is arranged in said depression 14, said screw being acted upon by means of a screwdriver. Moreover, said slider 11 and the screw means 13 are both protected against external influences with a cover 16 having available only a slot 17 to provide free access of said tool to enter torque into the screw means.

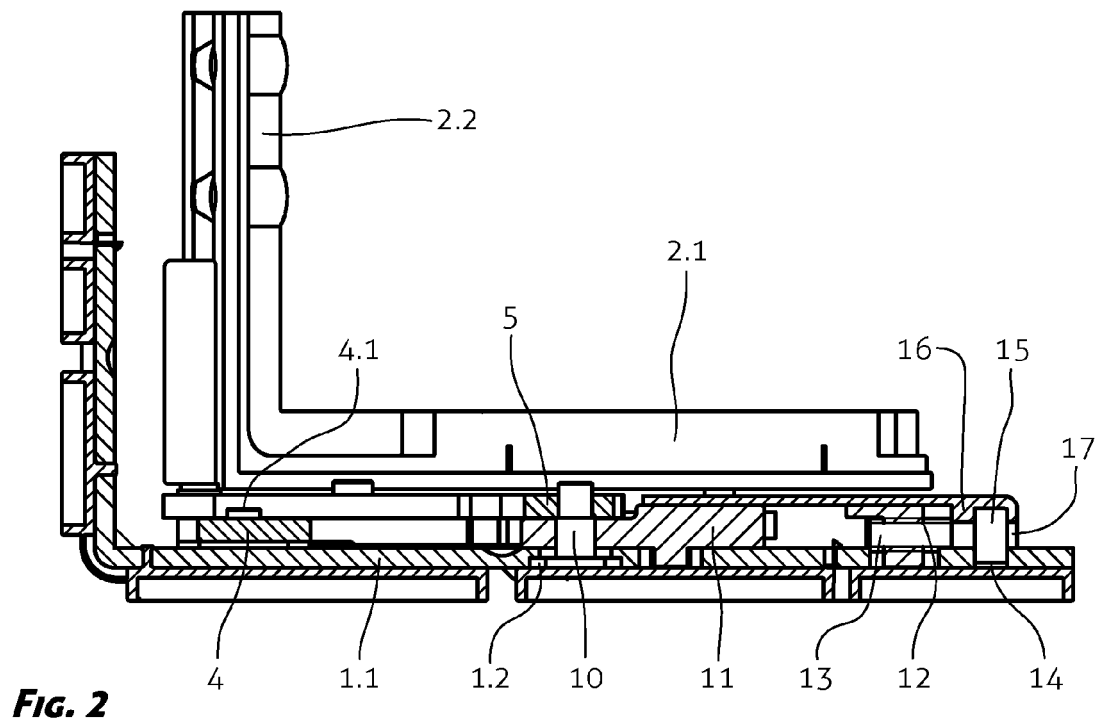
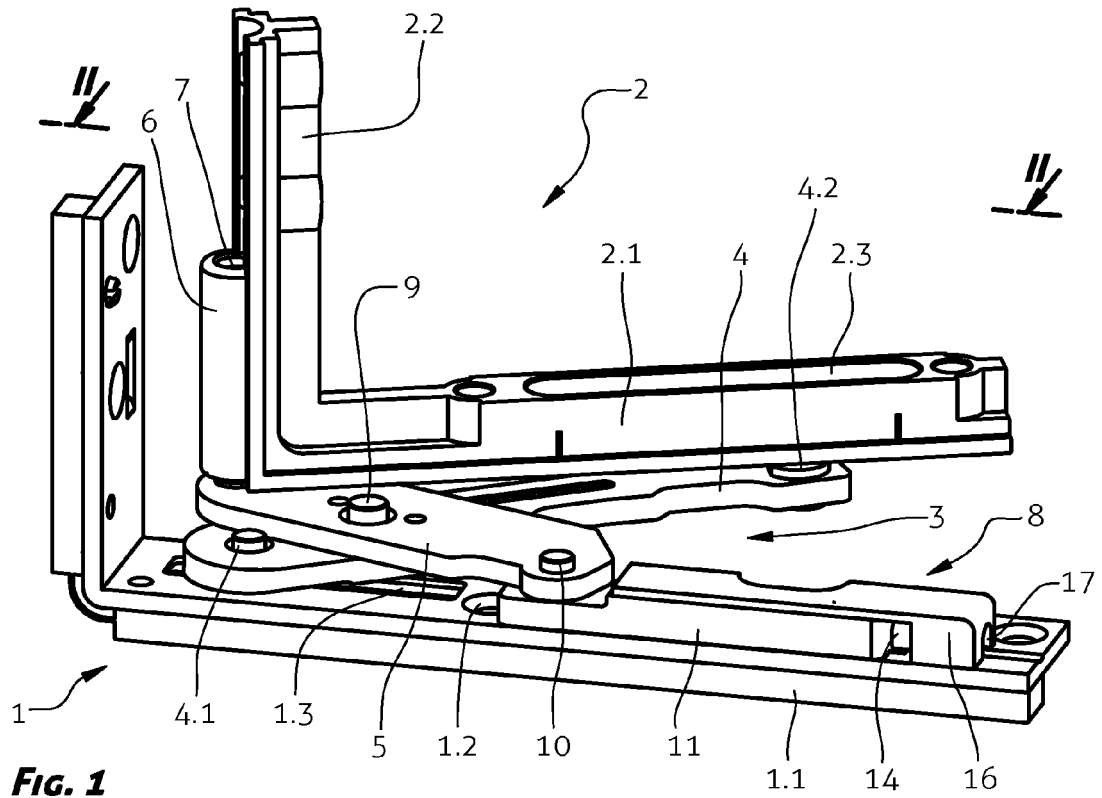
[0009] By turning the screw means 13, the slider 11 moves in the longitudinal direction of the leg 1.1 of the angle section 1 of the window and/or door frame, the motion of slider 11 being limited by the length of said elongated through-hole 1.2 in the leg 1.1. The movement of the slider 11 in the longitudinal direction of the leg 1.1 is transferred via the scissors mechanism 3 to the angle section 2 of the window and/or door sash, therefore ensuring a reliable and accurate window and/or door sash regulation in the horizontal direction.

Claims

1. A corner support hinge for a window and/or doors to provide corner support of a frame of a window and/or

door sash on a fixed frame, comprising a frame corner, which can be fastened to a fixed frame, a sash corner, which can be mounted to a frame sash by means of an adjustment screw guide for height adjustment of a sash frame and a scissors mechanism, by means of which a frame corner and a sash corner are movable relative to each other, **characterized in that** a scissor mechanism (3) is movable by means of a shifting element (8) arranged on a horizontal leg (1.1) of a corner (1) of a window and/or door frame.

2. A corner support hinge according to claim 1, **characterized in that** said shifting element (8) on the horizontal leg (1.1) is arranged movably in the longitudinal direction of the leg (1.1) by means of cooperation of an elongated through-hole (1.2) in the leg (1.1) and a pin (10), simultaneously enabling articulated connection of a second arm (5) of the scissors mechanism (3) with the shifting element (8).
3. A corner support hinge according to claims 1 and 2, **characterized in that** said horizontal leg (1.1) is formed in the area of the articulated connection to the first arm (4) of the scissors mechanism (3) with a through-hole (1.3), cooperating with a guide bar (4.1) of the first arm (4).
4. A corner support hinge according to any of the preceding claims, **characterized in that** said shifting element (8) is formed of a slider (11) being arranged on the leg (1.1) slidably movable in the longitudinal direction thereof, the first end of the slider (11) being articulated by means of the pin (10) with a second arm (5), whereas the second, free end of the slider (11) is formed with a threaded hole (12), cooperating with a screw means (13), arranged on the leg (1.1).
5. A corner support hinge according to any of the preceding claims, **characterized in that** in the area of the free end of the leg (1.1) is formed a depression (14), in which is arranged a free end (15) of the screw means (13) into which a torque may be introduced for the rotation of the screw means (13).
6. A corner support hinge according to claim 5, **characterized in that** said slider (11) and the screw means (13) are both covered with a cover bar (16).





EUROPEAN SEARCH REPORT

Application Number
EP 14 19 0600

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	EP 2 708 692 A2 (SCHLECHTENDAHL & SOEHNE WILH [DE]) 19 March 2014 (2014-03-19) * paragraph [0026] - paragraph [0039]; figures 1-8 *	1-6	INV. E05D15/52 E05D7/04
X	EP 2 341 206 A2 (WINKHAUS FA AUGUST [DE]) 6 July 2011 (2011-07-06) * paragraph [0017] - paragraph [0018]; figures 1-3 *	1,3-6	ADD. E05D15/30
			TECHNICAL FIELDS SEARCHED (IPC)
			E05D
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 16 September 2015	Examiner Rémondot, Xavier
CATEGORY OF CITED DOCUMENTS			
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	

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**ANNEX TO THE EUROPEAN SEARCH REPORT
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EP 14 19 0600

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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16-09-2015

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82